REMARKS

The Office Action rejects claims 1, 4-6, 8, 11, 15, and 21 under 35 U.S.C. 102(e) as being anticipated by Bingler. Applicant has amended claim 1 to better distinguish over the Bingler reference and the other prior art references of record. Claim 1, as amended, is directed toward an integrated fan pump having a fan and a pump. The pump is adapted to transfer a coolant from a coolant inlet to a coolant outlet. An external geometry of the pump is adapted to be sufficiently compact such that gas flow through the fan and the pump is substantially unimpeded by the pump. The gas flow moves from a gas flow inlet in a substantially straight, unchanged direction to a gas flow outlet. Finally, an electrical drive mechanism is configured to simultaneously drive the fan and the pump. The electrical drive mechanism has a rotational rate in the range of 2000 to 3000 rpm and the pump has a pump flow rate in the range of of 5 cc/sec to 10 cc/sec.

The Bingler reference does not teach or suggest a configuration as claimed where an external geometry of the pump is adapted to be sufficiently compact such that gas flow through the fan and the pump is substantially unimpeded by the pump, and the gas flow moves in a substantially straight, unchanged direction from a gas flow inlet to a gas flow outlet. While the fan is driven by a motor adapted to drive a fluid-circulating pump, the pump is positioned directly in front of the fan, blocking gas flow from flowing freely around the pump body (See Fig. 2). Gas flow from a gas flow inlet to a gas flow outlet is not clearly depicted or described in the Bingler reference, but it can be assumed that the gas flow inlet would have to be in

close proximity or integrated into the fluid-air heat exchanger tube 101, where gas flow is depicted by arrows traveling away from the fan apparatus (again, See Fig. 2). As a result, incoming gas flow is impeded to some degree by the pump body and the fan apparatus. Moreover, the air flow does not move in a substantially straight, unchanged direction from a gas flow inlet to a gas flow outlet. Instead, the gas flow must enter, change direction, and exit from a direction in which it came. Finally, Bingler does not teach an electrical drive mechanism having a rotational rate in the range of 2000 to 3000 rpm and a pump having a pump flow rate in the range of 5 cc/sec to 10 cc/sec.

In contrast, Applicants use a configuration such that gas flow through the fan and the pump is substantially unimpeded by the pump. The air flows straightly and freely around the pump body, from a gas flow inlet to a gas flow outlet (See, e.g., FIGs. 2A, 2B). Pump 104 can be positioned entirely outside the gas flow region of fan 102 while remaining mechanically and/or magnetically linked to fan 102. As a result, the heat exchanger can be mounted directly on the fan and receive effective cooling gas flow.

Claim 1, as amended, is believed to patentably distinguish over the Bingler reference. In addition, neither the Novotny, nor the Wagner patents teach an integrated fan pump configured in the manner as claimed. Claims 2-20 are believed to be in condition for allowance as each depends from what is believed to be an allowable base claim.

Applicants have amended claim 21 to better distinguish over the Bingler reference and the other prior art references of record. Claim 21, as amended, is directed to an integrated fan

pump configured to provide cooling of a component. The fan pump includes a housing. A fan has a fan head coupled to a fan propeller. A pump has a pump head coupled to a pump impeller. The pump is adapted to transfer a coolant from at least one coolant inlet to at least one coolant outlet. The pump is positioned entirely outside a gas flow region of the fan such that gas flow through said fan and said pump is substantially unimpeded by said pump. The gas flow moves from a gas flow inlet in a substantially straight, unchanged direction to a gas flow outlet. A heat exchanger is coupled to said outlet of said pump and thermally communicating with the component. An electrical motor is configured to simultaneously rotate said fan and said pump with respect to said housing.

For reasons previously described, Applicants believe that claim 21 patently distinguishes over the Bingler reference and the other prior art references of record. Again, neither Bingler nor the other prior art references teach a pump configured to allow gas flow to proceed unimpeded from a gas flow inlet in a substantially straight, unchanged direction, and where the pump is positioned entirely outside the gas flow region for this purpose. Claims 22-23 are believed to be in condition for allowance as they depend from what is believed to be an allowable base claim.

The Office Action rejects claim 1-23 under 35 U.S.C. 103 as being unpatentable over Bingler. To the extent that the Examiner's argument is understood by Applicants, Applicants maintain that the amended claims (including dependent limitations) distinguish over Bingler and the other prior art references, taken singularly or in combination, and again, for reasons previously described, are allowable.

Applicants have added new claims 24-28, which Applicants also believe distinguish over the prior art of record. New claim 24 recites a method of manufacturing an integrated fan pump. Claims 25-33 are believed to be allowable dependent claims.

Applicants believe that all information and requirements for the application have been provided to the USPTO. If there are matters that can be discussed by telephone to further the prosecution of the Application, Applicants invite the Examiner to call the undersigned attorney at the Examiner's convenience.

The Commissioner is hereby authorized to charge any fees due with this Response to U.S. PTO Account No. 17-0055.

Respectfully submitted,
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